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INTERSTITIAL POLYCHAETES FROM MADEIRA, WITH A DESCRIPTION OF *SYLLIDES BANSEI* PERKINS, 1981

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With 2 figures an 1 table

ABSTRACT. Thirty-four species of interstitial polychaetes from shallow subtidal sandy sediments are identified from one sample taken at the Ponta de S. Lourenço (Madeira) in September 1992. Twenty three species are new records for Madeira: *Spiophanes bombyx* (CLAPARÈDE, 1870), *Malacoceros fuliginosus* (CLAPARÈDE, 1868), *Aricidea cerrutii* LAUBIER, 1966, *Raphidrilus nemasoma* MONTICELLI, 1910, *Capitellides giardi* MESNIL, 1897, *Pseudomystides limbata* (Saint-Joseph, 1888), *Hesiospina similis* (HESSLE, 1925), *Microphthalmus pseudoaberrans* CAMPOY, 1982, *Brania arminii* (LANGERHANS, 1881), *Parapionosyllis* sp. (juvenile specimens), *Exogone lourei* BERKELEY & BERKELEY, 1938, *E. parahomoseta mediterranea*, SAN MARTÍN, 1982, *Syllides edentatus* (WESTHEIDE, 1974), *S. bansei* PERKINS, 1981, *Pionosyllis pulligera* (KROHN, 1852), *P. longocirrata* SAINT-JOSEPH, 1866, *P. spinisetosa* SAN MARTÍN, 1990, *Syllis garciai* (CAMPOY, 1982), *Linopherus canariensis* LANGERHANS, 1881, *Lumbrineris inflata* (MOORE, 1911), *Protodorvillea kefersteini* (MCINTOSH, 1869), *Meiodorvillea*? sp. and *Mesonerilla intermedia* WILKE, 1953. The species *Syllides bansei* is new for the East Atlantic; in addition, the collected specimens of this species are described, giving new morphologic data.

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INTRODUCTION

A quantitative study of the meiofaunal Polychaeta living on sand, collected on the east coast of Madeira in September 1992, is made. A number of 265 specimens, belonging to 34 species (one identified only at generic level), of 16 families have been collected and identified; the 67.6 % of them were previously unknown for the Madeiran coasts, after consulting the catalogue of NÚÑEZ & TALAVERA (in press).

The polychaetes from Madeira have been studied principally by LANGERHANS (1879, 1880, 1881, 1884), and FAUVEL (1914, 1916), but only a few of the 250 species reported by these and other authors are strictly meiopsammic species. Our paper supplies several meiopsammic species, most of them new for Madeira.

MATERIAL AND METHODS

The material was collected in Laginha (Ponta de S. Lourenço), located at the coordinates UTM 28S CB 3980 2422, on a stony bottom with small interfaces of organogenous coarse sand. The sample of sand was taken by apnea, at 4 m depth, with a volume of about 100 cc, fixed with 10% formaline. Afterwards, the sample was sieved in the laboratory in a column of 1.5 mm, 1 mm and 0.2 mm mesh in order to separate the macrofauna and the meiofauna. Afterwards, the specimens were isolated and preserved in ethanol 70 %. Most of the specimens were later mounted in glycerine jelly in order to be examined and measured under a microscope provided with a milimetred lens. The figures were made using an interference contrast (Nomarski) microscope with a camera drawing tube. The granulometric analysis was made on a column of sieves according with the granulometric scale of Wentworth (BUCHANAN & KAIN, 1971).

The specimens have been deposited in the collection of the Departamento de Biología Animal (Zoología) of the University of La Laguna, Tenerife, Spain (DZUL).

RESULTS

The sample examined is a sediment with many sandycoarse or very coarse pieces (65 %) and a high degree of carbonates (59 %); it is an ideal environment for the presence of interstitial fauna.

The species identified are listed on the Table 1; this Table also shows several meristics characters of the specimens (number of setigers, length and width) as well as the Dominance mean (Dm) calculated with the formule Dm= (n/N), being n the number of specimens of each species and N the total number of specimens of polychaetes of the sample. According with SOYER (1970), we consider as dominant species those which have the Dm >1%; in this sample, the 41 % of the species of polychaetes are considered as dominant species and the 5 species which characterized the sample are *Malacoceros fuliginosus*, *Aricidea cerruti*, *Raphidrilus nemasoma*, *Syllidia armata* and *Mesonerilla intermedia*.

On the other hand, the diversity (H') (Shannon-Weaver) is relatively high (H'=3.9193). The sample studied has moderately high richness and diversity mean.

The identified species polychaetes belong to 16 families, from which only 5 have a number of specimens more than 10 % (Fig. 1), standing out the Ctenodrilidae (19 %) having only one species and the Syllidae (18 %) having 12 species, the 35 % of the total of species of the sample.

The length rate of the specimens varies between 0.46 and 10.86 mm; the most part of the specimens belong to the meiofauna and they do not reach 1 mm of length; the family Nerillidae is the only one with the 100 % of the specimens belonging to the rank of the meiofauna *sensu stricto* (< 1mm), whilst the Spionidae, Dorvilleidae and, specially, the Syllidae also have macrofaunal specimens, surpassing scarcely 1 mm of length.

The specimens reported as *Meiodorvillea*? sp. do not belong to any of the genera recognized by HILBIG & BLAKE (1991) and EIBYE-JACOBSEN & KRISTENSEN (1994); probably they belong to a new genus and species of the family Dorvilleidae.

SISTEMATIC ACCOUNT

Syllides bansei PERKINS, 1981

Fig. 2

Syllides bansei PERKINS, 1981, p. 1147, figs. 29, 30. ALÓS, 1989, p. 335, fig. 6.

Material examined.- Madeira, Ponta de S. Lourenço, 4 m depth, sand; 2 specimens.

Description.- Body slender, proportionally long, 1.61-4.41 mm long, 0.11-0.36 mm wide, 39-40 setigers, without colour markings. Prostomium oval, somewhat wider than long; four large eyes in open trapezoidal arrangement, and two eyespots anteriorly located, close to the palps. Antennae and tentacular cirri lacking on both specimens. Palps short, stout, anteriorly rounded, fused at bases, with a scar, divergent on the remaining 2/3. Peristomial ring well marked. Dorsal cirri missing or broken on most segments (Fig. 2 A), with the shape typical of the genus. Parapodia conical and elongated; ventral cirri fusiform, similar in length to parapodial lobes, longer and slender posteriorly. Anterior parapodia each with about 15 compound setae, diminishing the number posteriorly, 12-14 on midbody. Compound setae heterogomph, with shafts provided of short spines on the long hinge; blades bidentate, with the proximal tooth somewhat longer than distal one, and provided with short spines on the margin. Marked dorso-ventral gradation of the the compound setae both in shape and length; the two dorsalmost setae have long blades, slightly curved, 48-50 mm long anteriorly, 70-75 mm on midbody and posteriorly; next pair of setae with blades provided each of a long, thin, basal spine, with a lenght of about 70-50 mm on midbody; remaining compound setae with blades similar to dorsalmost ones in shape but much shorter, 40 mm the longest ones and about 25 mm the shorter ones (Fig. 2 B, E). Solitary, occasionally two, dorsal simple seta on each parapodia from setiger 1, curved to the dorsum, proportionally thick, distally provided with long and fine spines on the convexe margin, arranged on 3 rows and tip rounded with a minute distal spine (Fig. 2 D). Solitary ventral simple seta on each most

posterior parapodia, very slender, provided distally with thin spines on the convex margin, indistinctly bifid (Fig. 2 G). Parapodia each with one acicula, straigth, distally truncated and rounded, accompanied of another one pin-shaped in each anterior parapodia (Fig. 2 C,F). Pharynx proportionally short, through about 4 segments, wide, dark greenish to black in colour, provided with 10 soft papilles surrounding the opening. Proventriculus as long as the pharynx, through 5 setigers, withe, translucid, with about 35 muscle cell rows very difficult to see. Pygidium semicircular, very small; anal cirri missing on both specimens.

Remarks.- The two examined specimens from Madeira agrees quite well with the descriptions of PERKINS (1981) on specimens from Florida and ALÓS (1989) for specimens from the Western Mediterranean; however, there are small differences in the dorsal simple setae. The specimens from the Mediterranean and Madeira lack the hyaline hood described by PERKINS and the Madeiran specimens have more spines on that setae than those of the Mediterranean. Furthermore, the specimens from Madeira have pharynx and proventriculus slightly longer than the specimens from the other areas.

Distribution.- Amphiatlantic (Florida, Madeira). Mediterranean.

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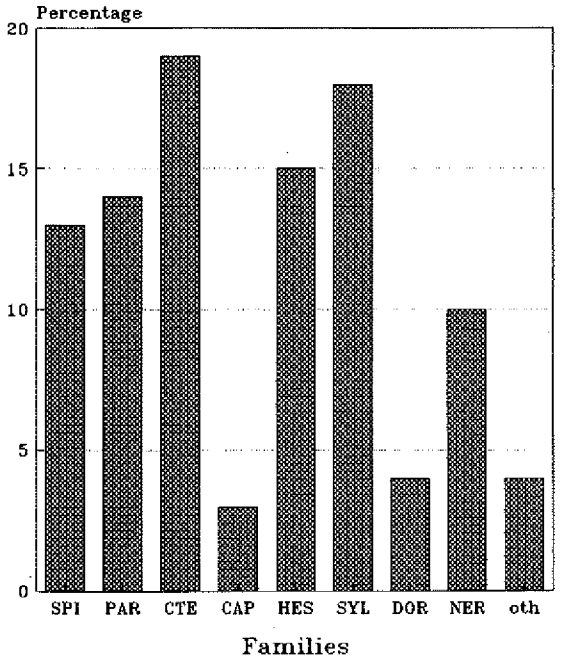

Figure 1 - Percentage of families according to number individuals. SPI= Spionidae; PAR= Paraonidae; CTE= Ctenodrilidae; CAP= Capitellidae; HES= Hesionidae; SYL= Syllidae; DOR= Dorvilleidae; NER= Nerillidae; oth= other families.

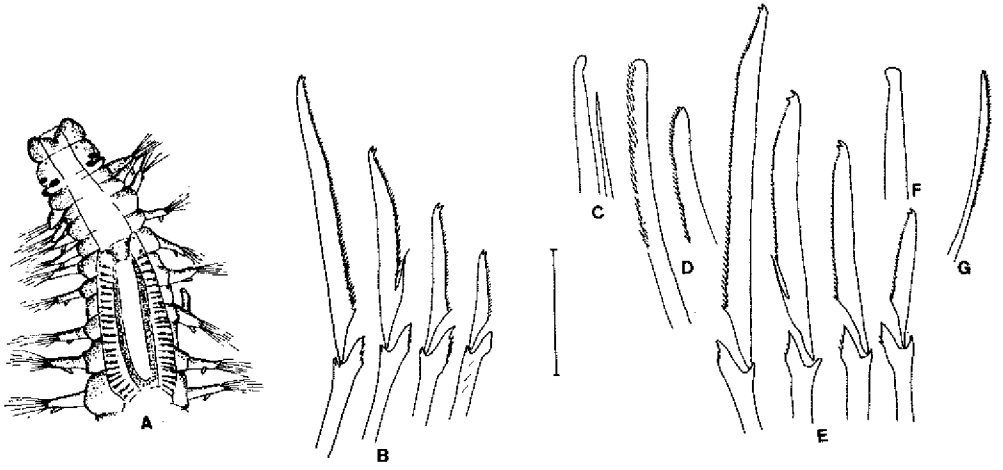

Figure 2 - *Syllides bansei*. A, anterior end, dorsal view; B, anterior compound setae; C, aciculae, anterior parapodia; D, dorsal simple setae; E, posterior compound setae; F, acicula, posterior parapodia; G, ventral simple seta.
Scale: A= 0.48 mm; B-F= 20 mm.

TABLE 1 - List of species and amount individuals collected; Dm= Dominance mean.

Species	n° ind.	n° setigers	length mm	width mm	Dm
Family Spionidae					
Spiophanes bombyx (Claparède, 1870)	2	8-10	0.83-1.17	0.12-0.13	0.75
Malacoceros fuliginosus (Claparède, 1868)	28	28-48	2.61-5.64	0.21-0.33	10.57
Prionospio steenstrupi Malmgren, 1867	4	22-27	2.51-2.27	0.15-0.18	1.51
Family Cirratulidae					
Caulleriella bioculata (Keferstein, 1862)	1	65	6.06	0.36	0.38
Family Paraonidae					
Aricidea cerrutii Laubier, 1966	37	35-58	2.49-6.51	0.21-0.27	13.96
Family Ctenodrilidae					
Raphidrilus nemasoma Monticelli, 1910	51	14-21	1.38-2.68	0.29-0.15	19-24
Family Opheliidae					
Polyophthalmus pictus (Dujardin, 1839)	1	22	7.44	0.15	0.38
Family Capitellidae					
Capitellides giardi Mesnil, 1897	9	28	0.96-5.55	0.13-0.38	3.40
Family Phyllodocidae					
Pseudomystides limbata (Saint-Joseph, 1888)	1	35	3.99	0.27	0.38
Family Chrysopetalidae					
Chrysopetalum debile (Grube, 1855)	2	12	3.00	0.70	0.75
Family Hesionidae					
Kefersteinia cirrata (Keferstein, 1862)	6	22-37	3.57-5.34	0.33-0.72	2.26
Syllidia armata Quatrefages, 1865	30	15-23	1.56-2.85	0.47-0.33	11.32
Hesiospina similis (Hessle, 1925)	1	28	4.76	0.39	0.38
Microphthalmus pseudoaberrans Campoy, 1982	2	19-32	1.44-1.38	0.15-0.18	0.75
Family Syllidae					
Brania arminii (Langerhans, 1881)	2	8-16	0.61-1.08	0.09-0.14	0.75
Parapionosyllis sp. (juvenile specimens)	2	8-10	0.53-087	0.09-0.11	0.75
Exogone lourei Berkeley & Berkeley, 1938	2	28-39	2.85-2.97	0.12-0.15	0.75
E. parahomoseta mediterranea San Martin, 1982	4	12-29	0.67-2.31	0.10-0.15	1.51
Syllides edentulus (Claparède, 1868)	14	10-14	0.46-1.08	0.11-0.24	5.28
S. edentatus (Westheide, 1874)	5	19-21	0.62-1.89	0.10-0.28	1.89
S. bansei Perkins, 1981	2	39-40	1.61-4.41	0.11-0.36	0.75
Pionosyllis pulligera (Krohn, 1852)	2	15-16	0.90-1.15	0.14-0.16	0.75
P. longocirrata Saint-Joseph, 1866	1	17	1.67	0.34	0.38
Pionosyllis spinisetosa San Martin, 1990	7	15-36	1.04-3.84	0.14-0.36	2.64
Syllis cornuta Rathke, 1843	1	21	2.07	0.12	0.38
Syllis garciai (Campoy, 1982)	6	12-36	0.88-4.38	0.16-0.21	2.26
Family Nereididae					
Neanthes rubicunda Ehlers, 1868	1	33	6.36	0.63	0.38
Family Amphinomidae					
Linopherus canariensis Langerhans, 1881	1	30	3.54	0.53	0.38
Family Eunicidae					
Nematonereis unicornis (Grube, 1840)	1	71	10.86	0.36	0.38
Family Lumbrineridae					
Lumbrineris funchalensis (Kinberg, 1855)	1	16	1.83	0.30	0.38
Lumbrineris inflata (Moore, 1911)	1	34	5.70	0.51	0.38
Family Dorvilleidae					
Protodorvillea kefersteini (McIntosh, 1869)	2	37-59	4.47-5.34	0.33-0.54	0.75
Meiodorvillea? sp.	8	6-13	0.52-1.24	0.14-0.22	3.02
Family Nerillidae					
Mesonerilla intermedia Wilke, 1953	27	6-8	0.53-0.97	0.09-0.13	10.19
Total	265				

REFERENCES

ALÓS, C.:

1989. Adiciones a la fauna de Anélidos Poliquetos de la Península Ibérica: familia Syllidae. *Cah. Biol. Mar.*, **30**: 329-337.

BUCHANAN, J. B. & J. M. KAIN.:

1971. Measurement of the physical and chemical enviroment. In: *Methods for the study of marine benthos.* Edited by N, A, Holme y A. D. McIntery. Blackwell Scinetific Publications, Oxford: 30-58.

EIBYE-JACOBSEN, D. & R. M. KRISTENSEN:

1994. A new genus and species of Dorvilleidae (Annelida, Polychaeta) from Bermuda, with a phylogenetic analysis of Dorvilleidae, Iphitimidae and Dinophilidae. *Zoologica Scripta,* **23** (2): 107-131.

FAUVEL, P.:

1914. Annélides Polychètes non-pelagiques provenant des campagnes de l'Irondelle et de la Princesse Alice (1885-1910). *Res. Camp. Sci. Prince Albert 1° Monaco,* **46**: 1-432.

1916. Annélides Polychètes pelagiques provenant des campagnes des yachts Hirondelle et Princesse Alice (1885-1910). *Rés. Camp. Sci. Prince Albert 1° Monaco,* **46**: 1-432.

HILBIG, B. & BLAKE, J. A.:

1991. Dorvilleidae (Annelida: Polychaeta) fromthe U.S. Atlantic slope and rise. Description of two new genera and 14 new species, with a generic revision of *Ophryotroccha. Zoologica Scripta,* **20** (2): 147-183.

LANGERHANS, P.:

1879. Die Wurmfauna von Madeira. *Zeits. Wissenschaf. Zool.* **32**: 513-592.

1880. Die Wurmfauna Madeiras. II. *Zeits. Wissenschaf Zoll.* **33**: 267-316.

1881. Die Wurmfauna von Madeiras. III. *Zeits. Wissenschaf Zoll.* **34**: 87-143.

1884. Die Wurmfauna von Madeira. IV. *Zeits. Wissenschaf. Zool.,* **40**: 247-285.

NÚÑEZ, J. & J. A. TALAVERA:

IN PRESS. Fauna of the Polychaetous Annelida from Madeira. *First Symposium «Fauna and Flora of the Atlantic Islands» 1993.*

PERKINS, T.:

1981. Syllidae (Polychaeta), principally from Florida, with descriptions of a new genus and twenty-one new species.*Proc. Biol. Soc. Wash.,* **4**: 1080-1172.

SOYER, J.:

1970. Bionomie Bénthique du plato continental de la côte catalane française. III. Les peuplements de Copepodes Harpacticoides (Crustacea). *Vie Milieu,* **21** (2-B): 337-511.

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B O C A G I A N A

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NOTES ON TWO MADEIRA PLANTS

By N. C. H. Krauss [1]

The composite plant «Abundância» (*Eupatorium adenophorum* Spreng.) has been known in Madeira for many years. On July 24, 1962 I collected a second species of *Eupatorium*, *E. riparium* Schultz-Bip., confirmed by the Royal Botanic Garden, Kew, England. This was growing in association with *E. adenophorum* in a damp area along a path near Monte. Both these species of *Eupatorium* are native to Mexico. I have seen *E. riparium* growing along a small stream in a ravine at the Desierto de los Leones, Distrito Federal, in the hills above Mexico City. Both species are pests in grazing land in Hawaii.

On November 7, 1960 I collected specimens of *Ulex minor* Roth (determined by Royal Botanic Garden, Kew) in the grassy hills above Ribeiro Frio. Since then I have seen it also at Encumeada and Santo da Serra. *Ulex europaeus* L. has been known in Madeira for a long time, but I have not seen any records of *U. minor*.

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